ABSTRACT OF THE DISCLOSURE

An adsorbent for selective removal of sulfur from a hydrocarbon feedstock includes a matrix material having a surface area of at least about 400 m^2/g and a surface acidity of less than about 0.20 μmol/m^2; and a metal phase dispersed through the matrix, the metal phase being selective to reversible adsorption of sulfur. A process for using and method for making the adsorbent are also provided.